Focus Groups: Astrobiotechnology

Chairs: ***Bruce Jakosky*** **,** ***Andrew Steele*** **,** ***Greg Bearman***

Project Progress

EXECUTIVE SUMMARY

Focus Group on Astrobiotechnology

The NAI formally chartered an Astrobiotechnology Focus Group, in order to provide oversight in this area, to enhance interactions and communications between science and technology, and to encourage new technologies to become integrated into the astrobiology science and missions. The initial efforts will emphasize the incorporation of terrestrial biotechnology into in situ astrobiology science and instrumentation, but the long–term emphasis is on all aspects of astrobiology; this includes telescopic analysis, remote–sensing from spacecraft, in situ analysis on planetary surfaces, and sample–return missions. Detailed planning is being carried out for a first workshop, dealing with Mars astrobiotechnology, to take place in September 2004.

FOCUS GROUP DESCRIPTION & ACTIVITIES

The Astrobiotechnology Focus Group (ABTF) of the NAI was formally chartered this year. Its goals are to provide oversight in the area of technology, to enhance interactions and communications between science and technology, and to encourage new technologies to become integrated into the astrobiology science and missions. The three co–leaders of the group (Greg Bearman at Jet Propulsion Laboratory (JPL), Bruce Jakosky at University of Colorado, and Andrew Steele at Carnegie Institution of Washington) have begun a broad effort to involve science participation from across the NAI and technology participation from the aerospace corporations that are involved in astrobiology–related activities and from biotechnology companies. Nearly 100 people from the biotechnology companies have been added to our mailing list, and a web site has been created to keep them informed.

The first major activity of the ABTF is to sponsor and organize a workshop on Mars Astrobiotechnology. The goal is to bring together scientists and technologists in order to promote the development of the next generation of in situ instruments for Mars missions. Without an effort such as this, the community will find itself in the position of having missions scheduled to fly but not having instruments ready that can address the science goals. The

workshop is scheduled for 8–10 September 2004, in Washington DC , is open to participation by anybody who is involved in relevant activities, and will include participation from the appropriate personnel at NASA Headquarters.

Follow–on activities will involve a workshop on “how to build a flight instrument,” aimed at biotech industry partners and at astrobiologists who are new to the NASA programs.

Highlights

- The NAI has formally chartered an Astrobiotechnology Focus Group. This group fills a tremendous gap that existed in planning development for future spacecraft missions.
- A major workshop on Mars Astrobiotechnology is being planned for 8–10 September 2004.

Roadmap Objectives

- ***Objective No. 1.2:*** Indirect and direct astronomical observations of extrasolar habitable planets
- ***Objective No. 2.1:*** Mars exploration
- ***Objective No. 2.2:*** Outer Solar System exploration
- ***Objective No. 7.1:*** Biosignatures to be sought in Solar System materials
- ***Objective No. 7.2:*** Biosignatures to be sought in nearby planetary systems